Figure 1-4. The making of Dolly (after the country singer Dolly Parton). That nuclei transferred from cultured adult amphibian keratinocytes can support development to the tadpole stage has been recognized for decades. Dolly represents the first mammal cloned from a cell of adult origin: epithelial cells were isolated from the udder of a Finn Dorset ewe (her progenitor/biological mother and identical twin) and cultured until dedifferentiation (embryonic reversion); cells were then fused using an electrical current with unfertilized eggs from which the genetic material had been removed; "reconstructed" eggs bearing the adult nucleus were implanted into surrogate recipients. The embryonic genome was successfully reprogrammed to birth in 1-of-277 fused couplets. Shown here is Dolly with her surrogate mother (a Scottish Blackface ewe). Cloning from adult cells also has been reported in mice, cattle, pigs, goats, cats, rabbits, mules, horses, rats, and dogs.

Note: Dolly was euthanized at age 6 (about half the life expectancy of her breed) because of a progressive lung disease. Conditions (eg., arthritis) related to premature aging have been noted in cloned animals.